

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 08 JUN 2005

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/041672

International filing date (day/month/year)
10.12.2004

Priority date (day/month/year)
11.12.2003

International Patent Classification (IPC) or both national classification and IPC
H01L23/367, H01L23/467, H05K7/20

Applicant
MOLEX INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/041672

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
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Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4
	No: Claims	1-3, 5
Inventive step (IS)	Yes: Claims	4
	No: Claims	1-3, 5
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Reference is made to the following documents (D):

D1 US 6 269 003

Box No. VIII

[1] The application does not meet the requirements of Article 6 PCT, because claims 1-3 are not clear.

[1.1] Claim 1 is unclear:

- (l. 3, 4) the wording "a flow passage between two adjacent radiating fins" is unclear. Any gap is a flow passage, because of which there will be "a flow passage between any two adjacent fins" **per definition**.

- (l. 6) the wording passageway is unclear and leaves the reader in doubt as to its exact technical meaning. In particular the difference between a "flow passage" and a "passageway" is not clear.

- (l. 7) the wording "notches relative to the passageway" is unclear since "relative" alone does not define a direction. As a result the notches may be parallel or perpendicular to the passageway, and anything in between. Moreover, at this stage the heat dissipating plate has not yet been defined in claim 1.

Words like "parallel", "perpendicular" or "aligned with", as far as they are directly and unambiguously derivable from the figures, would make claim 1 substantially clearer.

[1.2] Claim 2 is unclear, because it is not clear what exactly is meant with "stack mode"

[1.3] Claim 3 is unclear because "relative to the passage way" may be any direction relative to the passage way. From Fig. 3 it is concluded that the openings (25) are meant to be "aligned with" the passageways (13).

Box No. V

- [2] The present application does not meet the requirements of Article 33(2) PCT, because the subject-matter of claims 1-3, 5 is not new.
- [2.1] The subject matter of claim 1 is not new, because D1 discloses:
A heat-dissipating device for dissipating heat from a heat-generating component, the heat dissipating device comprising:
a radiator (18), the radiator having a plurality of radiating fins (17), a flow passage (the spacing between the fins 17 is a flow passage, moreover there are the through holes 171) being created between two adjacent radiating fins, wherein the fins are divided into a middle part and two side parts (Fig. 3; elements 17 are divided in 3 such parts by the unnumbered notches), the lower ends of the radiating fins in the two side parts providing at least one passageway (the unnumbered notches), and the passageway are connected to some of the flow passages, the two opposing sides of a heat dissipating plate provide notches (the 4 unnumbered notches in the plate 19) relative to the passageway of the radiator respectively;
a heat dissipating plate (19), the heat generating plate being located above the heat generating component (col. 3 l. 35-37) and having two opposing sides, at least one of the sides of the heat dissipating plate providing notches (the 4 unnumbered notches in plate 19 corresponding to notches in the plates 17) that correspond to the radiator passageways; and
a fan, the fan being disposed on top of the radiator (col. 3 l. 21-24).
- [2.2] The subject matter of claim 2 is not new because in D1 the radiating fins are fitted together in "stack mode" and buckled together using a clip connection (Fig. 4 clip visible, and col. 3 l. 38-col. 4 l. 9)
- [2.3] The subject matter of claim 3 is not new because in D1, the frame (16) is disposed on the radiator, the frame has an upper plate and two lateral plates set on the top and two sides of the radiator respectively, the two lateral plates having lower ends, the lower ends of the lateral plates each having openings relative to the passageway (notches in frame 16, corresponding to the notches in 17 and 19; Fig. 3).

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

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[2.4] The subject matter of claim 5 is not new because in D1, the upper plate of the frame has a through-hole (163) and the fan is arranged on the upper plate corresponding to the through-hole (air intake 162, col. 3 l. 21-24).

[3] Before a definitive statement can be made on novelty and inventiveness of the claims, the claims must be made clear. At the moment the claims are so unclear that the skilled person is not able to understand their scope of protection; see the clarity objections put forward in sections 1.1 -1.3 of this opinion.
It can, however, be pointed out already that given the documents found in a search of the prior art, it seems that a clarified independent claim basing on claims 1, 3 and 4 may be new and inventive.